REMARKS/ARGUMENTS

Claims 1-49 were previously pending in this application. Of the pending claims, claims 1, 16, 26, 40, and 45 are independent claims. Claims 1, 16, 26, 40, and 45 have been amended herein for clarity, and claims 15, 27, 28 and 41 have been cancelled for clerical reasons.

Independent claims 1 and 26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Xanthos et al. (US 6,928,280) in view of Zappala et al. (US 2002/0127993). Independent claims 16, 40, and 45 were rejected under 35 U.S.C. 103(a) as being unpatentable over Xanthos in view of Dyck et al. (2004/0260831). Thus, the rejection of all claims depends upon the applicability of Xanthos to the independent claims; it is respectfully submitted that Xanthos does not teach the limitations of the independent claims.

The pending claims pertain to a system and method for analyzing latency in a mobile network, and specifically address the shortcomings of prior systems that check for latency. Claim 1, which is reproduced below for ease of reference, is reasonably representative, although the remaining independent claims will also be addressed in turn.

> 1. (Currently Amended) A method for measuring latency between a first device and a second device during a user data session, said first and second devices communicating in accordance with a communications specification, said method comprising:
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> transmitting, during a user data session between said first and second devices, a message from said second device to said first device, said message being in accordance with said communications specification;
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> during the user data session receiving a response message from said first device, said response message being in accordance with said communications specification;
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> computing an elapsed time from transmission of said message to receipt of said response message to determine said latency; and
>
> recording said latency in a latency parameter in a data record.

As can be seen, this claim calls for checking latency on a user session level during a data call, and indeed, claim 1 as amended specifically recites transmitting a message from the second

device to the first device "*during a user data session* between said first and second devices" and receiving a response message from said first device "*during the user communication session*."

In contrast, the latency evaluation scheme of Xanthos does not operate during a user communication session, but rather operates in an autonomous stand-alone mode. See, for example, Xanthos at column 3, line 36, through column 4, line 5 ("[T]he system includes *multiple remote units that are unattended and are remotely controlled* by a back end processor. This allows for a large quantity of measurements to be taken in a fully automated manner.") (emphasis added). *See also* Summary of Art below.

Therefore it is respectfully submitted that Xanthos does not teach the express element of evaluating latency during a user communication session, and it does not appear that any of the other art of record supplies this missing element. As such, favorable reconsideration of claim 1 and its dependent claims 2-15 is respectfully requested.

Similarly, claim 16 recites a method for measuring latency during a user data session, including transmitting a Link Control Protocol Echo message to a mobile station during the user data session and receiving a Link Control Protocol Echo Response message from the mobile station during the user data session.

Claims 26, 40, and 45 similarly encompass systems for measuring latency during a user data session. The systems include a device for transmitting a message to another device during a user data session, receiving a response message from that other device, and computing latency based on the delay.

As with claim 1, it is respectfully submitted that Xanthos does not teach the express element of evaluating latency during a user communication session of claims 16, 26, 40, or 45, and again it does not appear that any of the other art of record supplies this missing element. As such, favorable reconsideration of claims 16-40 and 42-49 is respectfully requested.

The Examiner is also requested to favorably reconsider the issue of combining Xanthos with Zappala. The Action asserts that the combination would enable Xanthos to, in the words of

Zappala, "quickly determine adjustments...solving not easily seen problems or geographically limited problems." *See* Action at page 3. However, there is no evidence that Zappala was referring to Xanthos when it cited these problems. Moreover, there is also no indication in Xanthos that it experienced any of these problems and needed such a "solution." Please clarify and support the Action's assumption that Xanthos was unable, without modification, to quickly determine adjustments and to solve "not easily seen problems or geographically limited problems."

With respect to the combination of Dyke into Xanthos, the Action seems to be asserting at page 9 that Xanthos had difficulty with "timing request retransmissions" and "re-registration." Since these concepts are not germane to the Xanthos technique at all, and are not mentioned in Xanthos at all, clarification is requested. Please clarify in what way "timing request retransmissions" and "re-registrations" relate to Xanthos, if at all, and please clarify why it was assumed in the Action that Xanthos had difficulties with respect to these activities.

Summary of Art

With respect to Zappala, this application pertains to the measurement of latency for a voice network, not a data network. Moreover, an important aspect of Zappala is a performance monitor system built into the mobile handset. The present application in contrast, which only applied to measuring latency for wireless CDMA networks, measures latency using the messages already supported in the handset. As a matter of fact, in a preferred embodiment, the invention of the present application requires no changes to existing CDMA handsets. All functionality required for measuring latency is implemented on the PDSN/HA. This functionality requires minimal changes to the existing PDSN/HA functionality.

With respect to Dyck, this application pertains to use of latency measurements in the context of optimizing MIP re-registration attempts. This patent describes calculations of latency done in the handset (see Fig 8) not in the PDSN/HA. Dyck calculates latency by sending messages from the handset, specifically ICMP echo messages, which require special network support in a CDMA 2000 network using IPv4. The use of RRP message to compute latency in Dyck is computed in the handset and computes the RTT between handset and HA. In contrast,

the present invention enables the use of the RRP message for latency calculation in the PDSN, calculating PDSN/FA to HA RTT delay.

With respect to Xanthos, this patent requires use of multiple mobile and/or stationary unattended, position and performance equipment. One of the keys of the invention of the present application is that during normal data calls that subscribers make, the network collects information (Accounting Usage Data Records about the data call, including where in the network (BSC/PCF) the call is originating from). The CDMA network uses the LCP Echo in an embodiment of the invention to monitor availability of a mobile for "always on" functionality. This system would work with all existing wireless data handsets that support CDMA 2000 without any need to deploy any new equipment in the network, even in data roaming scenarios, as long as the visited PDSN supports LCP ECHO as per IS 835C. However, the use of monitoring equipment as in Xanthos would not provide this benefit. Finally, all figures of Xanthos (Fig 1e for instance) that show data paths, are shown involving the Mobile Switching Center. Of course, it will be appreciated that Mobile Switching Centers are only used for voice, NOT for data. The data flow in Fig 1e will not work in either a CDMA or GSM wireless network.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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